

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006766**Date Inspected:** 19-May-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** Chung Fu Kuan**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower, Jacking, and Deviation Saddles**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication shop #4 and the Foundry shop at Japan Steel Works.

**Machine Shop #4:**

Machining Operation of Saddle: Tower Saddle Segment T1-1 (cast section welded to steel section)

The QA Inspector observed that tower saddle segment T1-1 is located in Machine Shop #4 to have the final machining performed. On this date, the QA Inspector observed that the inside of the south cable trough is being milled to final dimensions on the tower saddle segment.

**Fabrication Shop #4:**

Weld Operation of Saddle: Tower Saddle Segment T1-2 (steel section being welded to steel section)

The QA Inspector observed the partial-joint penetration groove (root pass) weld operation on the rib plate (steel section) to base plate (steel section) of tower saddle T1-2. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. K. Kobayashi (08-5023) on weld joint no. 8Y-12L-4 were in compliance with WPS SJ-3012-2 per the SMAW process in the (2G) horizontal position using (5.0) mm diameter E7016 electrode. The QA Inspector observed that the partial-joint penetration groove (root pass) weld operation was in process at the end of the QA Inspectors' shift.

Weld Operation on Saddle: Tower Saddle Segment T1-3 (cast section being welded to steel section)

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The QA Inspector observed the partial-joint penetration groove (fill pass) weld operation on the rib (cast section) to rib plate (steel section) of tower saddle T1-3. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. K. Igarashi (92-2226) on weld joint no. 9Y-12U-2 and Mr. S. Hayashi (05-3113) on weld joint no. 9Y-12U-3 were in compliance with WPS SJ-3012-5 per the FCAW process in the (2G) horizontal position using (1.6) mm diameter TM55 electrode. The QA Inspector observed that the partial-joint penetration groove (fill pass) weld operation was in process at the end of the QA Inspectors' shift.

Storage of Saddle: West Deviation Saddle Segment W2-E1 (cast section welded to steel section)

The QA Inspector observed that west deviation saddle segment W2-E1 is located in Fabrication Shop #4. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-E1.

Machine Shop #2:

Machining Operation on Saddle: West Deviation Saddle Segment W2-E2 (cast section welded to steel section)

The QA Inspector observed that west deviation saddle segment W2-E2 is located in Machine Shop #2. On this date, the QA Inspector observed that no machining was performed on west deviation saddle segment W2-E2.

Fabrication Shop #4:

Cutting Operation on Saddle: West Deviation Saddle Segment W2-E3 (cast section welded to steel section)

The QA Inspector observed JSW welding personnel Mr. T. Ohta performing the cutting operation with a torch to remove the temporary attachment - (stay plate) that was previously welded to the edge of the rib plates for dimensional and distortion control on west deviation saddle segment W2-E3. The QA Inspector observed that the cutting operation performed by Mr. Ohta was in process at the end of the QA Inspectors' shift.

Cutting Operation of Saddle: West Deviation Saddle Segment W2-W1 (cast section welded to steel section)

The QA Inspector observed JSW personnel were removing the run-off plates using a cutting torch from the end of rib plate 4-15 after the welding operation was completed and the weld had cooled to ambient temperature. The purpose of the run-off plates are to ensure soundness of the weld by allowing the arc of the weld to start and stop on the temporary run-off plates and also maintain the full cross section of the weld throughout its specified length. The QA Inspector observed that the removal of the run-off plates were in process at the end of the QA Inspectors' shift.

Storage of Saddle: West Deviation Saddle Segment W2-W2 (steel section)

The QA Inspector observed that west deviation saddle segment W2-W2 is located in Fabrication Shop #4. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-W2.

Weld Operation on Saddle: West Deviation Saddle Segment W2-W3 (steel section being welded to steel section)

The QA Inspector observed the partial-joint penetration groove (root pass) weld operation on the rib plate (steel section) to stem plate (steel section) of west deviation saddle segment W2-W3. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 160 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. M. Kato (08-5018) on weld joint no. W3Y-11V, and Mr. T. Watanabe (08-5169) on weld joint no. W3Y-4V were in compliance with WPS SJ-3011-4 per the SMAW process in the (3G) vertical position using (4.0)

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mm diameter E9018 electrode. The QA Inspector observed that the partial-joint penetration groove (root pass) weld operation was in process at the end of the QA Inspectors' shift.

### Foundry Shop:

Storage of Saddle: West Deviation Saddle Segment W2-W2 (cast section)

The QA Inspector observed that west deviation saddle segment W2-W2 (cast section) is located in the Foundry Shop for storage until west deviation saddle segment W2-W2 (steel section) is ready for the fit-up operation. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-W2 (cast section).

Storage of Saddle: West Deviation Saddle Segment W2-W3 (cast section)

The QA Inspector observed that west deviation saddle segment W2-W3 (cast section) is located in the Foundry Shop for storage until west deviation saddle segment W2-W3 (steel section) is ready for the fit-up operation. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-W3 (cast section).

NDT Operation pending on Saddle: East Saddle E2-E1 (cast saddle)

The QA Inspector observed that JSW personnel completed the grinding operation on the shaped areas on the outside of the trough section and on the rib sections where previously JSW personnel removed the excess cast material by the scarfing operation- (air-carbon-arc method) on the rough casting of east saddle E2-E1 (cast saddle). The purpose of the grinding operation is to profile the areas to a smooth finish and subsequently for the NDT operation. On this date, the QA Inspector observed that no work was performed on east saddle E2-E1 (cast saddle).

NDT Operation pending on Saddle: East Saddle E2-W1 (cast saddle)

The QA Inspector observed that JSW personnel performed the gouging operation- (by the air-carbon-arc method) and ground the excavations to bright metal in preparation for the NDT inspection of the excavated areas. The NIS QC NDT Personnel will perform the liquid penetrant test (PT) and magnetic particle test (MPT) inspection of the excavated areas at various locations on the outside of the trough section and rib sections on east saddle E2-W1 (cast saddle) to ensure the defects were completely removed prior to the start of the repair weld operation. The QA Inspector observed that the NDT operation has not started on east saddle E2-W1 at the end of the QA Inspectors' shift.

NDT Operation on Saddle: West Jacking Saddle (cast saddle)

The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that the NDT method of liquid penetrant test (PT), magnetic particle test (MPT), and the ultrasonic test (UT) inspection will be performed on the rough machined surfaces of the west jacking saddle. Mr. Kon informed the QA Inspector that the NDT inspection will be started during the week of May 18th 2009. On this date, the QA Inspector observed that no work was performed on the west jacking saddle.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with the applicable contract documents.

### Summary of Conversations:

No significant conversations were reported on this date.

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### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy, 510 385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Peterson, Art	Quality Assurance Inspector
<b>Reviewed By:</b>	Lanz, Joe	QA Reviewer

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